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Transmitted herewith for filing is the patent application of:

Inventor(s): Michael R. Schramm

For: FLUID POWERED BUBBLE MACHINE WITH SPILL PROOF CAPABILITY

Enclosed are:

- A specification consisting of: a 17 page disclosure, 6 page(s) of claims, and an abstract of the disclosure.
- Declaration.
- Three (3) sets of formal drawings, each set consisting of 11 sheet(s).
- An assignment of the invention to _____
- A Power of Attorney executed by the Inventor(s)/Assignee.
- A verified statement to establish Small Entity status under 37 CFR 1.9 and 37 CFR 1.27.
- An Information Disclosure Statement.

<u>CLAIMS AS FILED</u>		Other than <u>Small Entity</u>	
Total Claims	<u>20</u>	-20 = <u>0</u>	x \$ 11 = <u>0</u> or x \$ 22 = _____
Independent Claims	<u>4</u>	- 3 = <u>1</u>	x \$ 41 = <u>41</u> or x \$82 = _____
Multiple Dependent Claim Presented		+ \$135 = <u>0</u>	or + \$270 = _____
Basic Fee		\$ <u>395</u>	or \$ <u>790</u> .
Recording Fee for Assignment (\$40.00)		\$ _____	or \$ _____
TOTAL FILING FEE:		\$ <u>436</u>	or \$ _____.

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Signature

PATENT APPLICATION

**FLUID POWERED BUBBLE MACHINE
WITH SPILL PROOF CAPABILITY**

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FEBRUARY 10, 1998

FLUID POWERED BUBBLE MACHINE WITH SPILL-PROOF CAPABILITY

This application is a continuation of co-pending application serial number 08/608,854 filed February 29, 1996, which was a continuation-in-part of co-pending application serial number 08/086,541 filed July 1, 1993 and since issued March 5, 1996 as US #5,495,875, which was a continuation-in-part of co-pending application serial number 07/828,345 filed January 30, 1992 and since issued September 21, 1993 as US #5,246,046. The benefit of the filing date of this earlier filed application is claimed under 35 U.S.C. § 120.

BACKGROUND OF THE INVENTION

The present invention relates to improved machines for blowing bubbles as well as to improved machines for providing water spray for amusement. The invention has particular application for use with bubble solution of the type used by children in blowing bubbles.

It is well known that bubble machines have existed for some time and are commercially available in a variety of embodiments. Prior to applicant's co-pending application, and other applications by applicant which have matured into U.S. patents, these bubble machines have been of a type and geometry which provided no resistance to spillage of liquid contents of the machine. In addition, a variety of water toys have long existed that provide an amusing spray of water as well actuate movement of cartoon characters or cause the cartoon characters to spray water.

SUMMARY OF THE INVENTION

The present invention relates to an improved fluid powered bubble machine having various impellers, fans, axles and gears working in combination and wherein water from a source such as a garden hose activates the bubble machine to generate a continuous stream of bubbles. The machine can be used in combination with a sprinkler to generate both a stream of bubbles from one end of the machine, and a stream of water from the other end. In different embodiments of the present invention, selective channeling of the sprinkler portion of the bubble machine creates amusing and intermittent streams of water. In some instances, only the bubble portion of the machine is in use and the sole result is a pleasing, continuous stream of bubbles. In other instances, only the sprinkler portion of the machine is in use and the sole result is the generation of streams of water useful for either water play or for watering the lawn or other vegetation. In yet another embodiment, the water sprinkling portion of the apparatus has a non-fluid powered bubble machine, such as

a battery powered bubble machine mounted on top. In its ideal use, both the sprinkler and bubble portion of the bubble machine are in use resulting in both a continuous stream of bubbles and streams of water, thereby maximizing the pleasure potential and utility of the invention.

In a preferred embodiment of the present invention, the fluid powered bubble machine comprises an impeller housing which encloses an impeller and which has a threaded opening for connection to a standard garden hose. On one side wall of the housing is another opening that forms a channel for providing fluid communication between the inner cavity of the housing and a fluid tank. Water flowing into the bubble machine from the garden hose or other water source flows past the impeller causing the impeller to act as a hydraulic motor which powers other portions of the bubble machine which are described below. In the preferred embodiment, a hollow cylinder is provided for rotation within the fluid tank. The hollow cylinder rotates in response to torque from the hydraulic motor and causes a constantly changing portion of ports to be alternately open and closed. This, in turn, causes the water streams to be intermittent. Throughout the rotation cycle of the hollow cylinder, there are always one or more ports in the open position, so as to allow the water to flow continuously. After flowing past the impeller, the water flows into the hollow cylinder within the fluid tank and is ported out via a plurality of channels that guide the water into streams emanating radially outward and upward from the fluid tank.

On a second side wall of the impeller housing is a sealed, second opening for a geared axle. The axle is attached to the impeller at one end thereof, and is rotatably connected to a second impeller or fan. While the second impeller is not hydraulically ported to the hydraulic motor, torque from the hydraulic motor rotates the geared axle causing the second impeller to turn. Rotation of the second impeller generates an air stream. A bubble solution container is attached to the upper end of the bubble machine. The bubble solution container has an opening in the top surface and a funnel depending from the top surface into the inner cavity of the container. A bubble wheel, having bubble openings at the periphery of the bubble wheel, is positioned within the funnel and is rotatably connected to an extension of the geared axle. Rotation of the geared axle thus synchronously rotates both the second impeller and the bubble wheel. The diameter of the bubble wheel is sufficiently large such that an upper portion of the bubble wheel is continuously outside of the bubble container and is thereby exposed to the continuous air stream generated by the rotation of the second impeller. When a thin film of bubble solution adheres to the bubble openings at the periphery of the bubble wheel, the continuous air stream generated by the second impeller creates a continuous stream of

bubbles.

Accordingly, in the preferred embodiment of the present invention wherein both the bubble machine and the sprinkler portion are in operation, it is an object of the present invention to provide a fluid powered bubble machine with spill-proof capability by connecting the lower impeller housing spout to a pressurized fluid or water source. The water will turn the impeller, exit the impeller housing through the upper impeller housing spout, enter the fluid tank through the fluid tank attach spout, fill and pressurize the fluid tank, exit through one or more aligned fluid passage holes and fluid passage slots, and create amusing streams of water. In response to the rotation of the impeller, the impeller forward gear will turn the fluid drum gear. Turning of the fluid drum gear will cause various fluid passage holes and fluid passage slots to constantly align and misalign in a predetermined or random pattern. The rotating rearward impeller gear will cause the coupled female fan gear and fan to rotate. Rotation of the fan creates an air stream directed at the bubble wheel. Rotation of the fan, fan axle, and male fan gear also causes rotation of the bubble wheel through the bubble trough. A plurality of bubble orifices placed on the outer periphery of the bubble wheel thus rotates into the bubble trough, picks up a thin film of bubble solution, continues its rotation within the rectangular funnel until the bubble orifices are protruding outside of the container. The air stream "blows" bubbles with the bubble film thereby vacating the bubble orifices. Continued rotation of the bubble wheel results in a continued exposure of bubble film to the air stream.

DESCRIPTION OF DRAWINGS

The objects and many attendant advantages of this invention will be readily appreciated and become readily apparent as the same becomes better understood by reference to the following detailed description, when considered in conjunction with the accompanying drawings and in which like reference numerals designate like parts throughout the figures thereof and wherein:

Figure 1 is an isometric assembly view of the bubble machine (rotated 90 degrees counterclockwise to facilitate a larger scale figure). The front right portion of the solution container shells, lower impeller housing, and fluid tank are shown cut away. The right portion of the upper impeller housing and fluid drum (except for part of the fluid drum gear) are also shown cut away.

Figure 2A is an exploded isometric view of the various parts that make up the bubble machine and illustrates their relationship to each other. The portions shown cut away, are identical to that shown in figure 1.

Figure 2B is an enlarged view of the bubble machine base shown in figure 2A.

Figure 2C is an enlarged view of the fluid tank shown in figure 2A.

Figure 2D is an enlarged view of the fluid drum shown in figure 2A.

Figure 2E is an enlarged view of the impeller housings and impeller shown in figure 2A.

Figure 2F is an enlarged view of the fan and bubble wheel shown in figure 2A.

Figure 2G is an enlarged view of the solution container shells shown in figure 2A.

Figure 3 is an orthographic side view of the bubble machine. The portions shown cut away are the same as in figure 1 except that the bubble drum gear is not cut away. The bubble solution is shown retained in the bottom of the lower shell.

Figure 4 is a sideways oriented enlargement of the bubble solution container portion of the bubble machine of figure 3. The bubble solution is shown retained in the top of the upper shell.

Figure 5 is an inverted enlargement of the bubble solution container portion of the bubble machine of figure 3. The bubble solution is shown retained in the front portions of the upper and lower container shells.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

In order to facilitate the understanding of the present invention in reviewing the drawings accompanying the specification, a feature list is provided below. It is noted that like features are like numbered throughout all of the figures.

FEATURE TABLE

Number	Feature	Number	Feature
10	Bubble machine assembly	74	Impeller forward axle
12	Forward end of assembly	76	Impeller rearward axle
14	Rearward end of assembly	78	Impeller blade
20	Bubble machine base	80	Fan
22	Attach pin - machine base	82	Fan axle
24	Attach pin - machine base	83	Rearward retaining flange - fan axle
26	Attach pin - machine base	84	Forward retaining flange - fan axle
30	Fluid tank	86	Male fan gear
32	Fluid passage hole - fluid tank	87	Female fan gear
34	Attach receptacle - fluid tank	88	Fan blade
35	Attach spout - fluid tank	90	Bubble Wheel
36	Attach spout rearward edge - fluid tank	92	Bubble orifice
38	Attach spout inner surface - fluid tank	94	Bubble wheel axle
40	Fluid drum	96	Retaining flange - bubble wheel
41	Fluid drum open end	98	Bubble wheel gear
42	Fluid drum gear	100	Lower solution container shell
44	Inner gear surface - fluid drum	102	Bubble solution trough - lower shell
46	Fluid passage slot - drum fluid	104	Connecting flange - lower shell
50	Lower impeller housing	106	Attach receptacle - lower shell
52	Attach receptacle - lower impeller housing	108	Fill line
54	Spout - lower impeller housing	110	Upper solution container shell
56	Axle retaining slot - lower impeller housing	112	Funnel - upper shell
58	Stop - lower impeller housing	114	Funnel upper opening - upper shell
60	Upper impeller housing	116	Funnel lower opening - upper shell
61	Upper impeller housing spout	118	Axle retaining slot - funnel
62	Stepped spout edge - upper impeller housing	120	Connecting flange - upper shell
64	Outer spout surface - upper impeller housing	122	Fan axle trough - upper shell
66	Axle retaining slot - upper impeller housing	124	Forward fan axle retaining flange - upper shell
68	Stop - upper impeller housing	125	Rearward fan axle retaining flange - upper shell
70	Impeller	126	Upper shell fill spout
71	Impeller forward gear	130	Cap
72	Impeller rearward gear	140	Bubble solution level

Referring now to the drawings and particularly to Figures 1 and 2, the invention is a machine 10 that comprises a base 20, a fluid tank 30, a fluid drum 40, a lower impeller housing 50, an upper impeller housing 60, an impeller 70, a fan 80, a bubble wheel, a lower solution container shell 100, an upper solution container shell 110, and a cap 130. The machine 10 has a forward end 12 and a rearward end 14. Base 20 comprises a support base with a plurality of attach pins 22, 24, and 26. The preferred embodiment of the present invention will now be described by further reference to the figures.

As can be seen from figure 2C, fluid tank 30 contains a plurality of fluid passage holes 32, an attach receptacle 34, and an attach spout 35. Attach receptacle 34 is adapted to snappingly attach to and be supported by attach pin 22. Rearward edge 36 of attach spout 35 bears against the impeller housing stepped edge 62, and the inner surface 38 of attach spout 35 connects with outer surface 64 of upper impeller housing spout 61.

Figure 2D shows fluid drum 40 having an open end 41, a gear 42, an inner gear surface 44, and a plurality of fluid passage slots 46. Fluid drum 40 is adapted to reside on and rotate about fluid tank 30. The inner gear surface 44 is adapted to allow attach spout 35 and attach spout 61 to be in coupling engagement within and to pass through the inner gear surface 44.

As can be seen from figure 2E, an impeller housing is defined by a lower impeller housing 50 and an upper impeller housing 60. Lower impeller housing 50 is further defined as having an attach receptacle 52, a spout 54, an impeller axle retaining slot 56, and a stop 58. The attach receptacle 52 is adapted to snappingly attach to and be supported by attach pin 24. Upper impeller housing 60 is further defined as having a spout 61, a stepped spout edge 62, a spout outer surface 64, an axle retaining slot 66, and a stop 68. The lower impeller housing 50 and the upper impeller housing 60 are adapted to snappingly engage one to another to form a complete impeller housing.

As can also be seen from figure 2E, an impeller 70 has a forward gear 71, a rearward gear 72, a forward axle 74, a rearward axle 76, and a plurality of impeller blades 78. Impeller 70 is adapted to be retained by and be rotatable within lower impeller housing 50 and upper impeller housing 60 when the impeller housings are in coupling engagement with one another by means of the impeller axles 74 and 76 being retained by axle retaining slots 56 and 66.

As shown in figure 2F, a fan 80 is provided having fan axle 82, a rearward fan axle retaining flange 83, a forward fan axle retaining flange 84, a male fan gear 86, a female fan gear 87, and a plurality of fan blades 88.

Also shown in figure 2F, a bubble wheel 90 has a plurality of bubble orifices 92 about the outer periphery, a bubble wheel axle 94 at the center, at least one bubble

retaining flange 96 on the end of the bubble wheel axle 94, and a bubble wheel gear 98. The male fan axle 86 is adapted to mesh with and provide torque to bubble wheel gear 98.

Figure 2G shows a bubble solution container having a lower solution container shell 100 and an upper solution container shell 110. The lower solution container shell 100 is further defined as a shell having a bubble solution trough 102, a connecting flange 104, an attach receptacle 106, and a fill line 108. The attach receptacle 106 is adapted to snappingly attach to and supported by base attach pin 26.

As is also shown in figure 2G, the upper solution container shell 110 is further defined as a shell having a funnel 112, a upper funnel opening 114, a lower funnel opening 116, bubble wheel axle retaining slots 118, a connecting flange 120, a fan axle trough 122, fan axle retaining flanges 124 and 125, and a filling spout 126. The lower solution container shell 100 and upper solution container shell 110 are adapted snappingly attach together by connecting flanges 104 and 120. The fill spout 126 is adapted to threadingly attach to a cap 130. The bubble wheel axle retaining flange 118 is adapted to snappingly attach to and support rotation of the bubble wheel axle 94. The fan axle retaining slots 124 and 125 are adapted to snappingly attach to and support rotation of fan axle 82.

The operation of the present invention can be seen by reference to figure 1. When a pressurized fluid source is connected to the lower impeller housing spout 54, the fluid will cause the impeller 70 to rotate by creating a pressure differential on the impeller blades. As impeller 70 rotates, male impeller gear 72 that is coupled to female fan gear 87 causes the fan 80 to rotate. The rotation of impeller 70 also causes impeller forward gear 71 which is meshed with fluid drum gear 42 to rotate the fluid drum. The rotation of fan 80 causes fan blades 88 to generate an air flow in the direction of bubble wheel 90. As fan 80 rotates, male fan gear 86 that is meshed with bubble wheel gear 98 causes bubble wheel 90 to rotate. The rotation of bubble wheel 90 causes bubble orifice 92 to continuously travel through and be immersed in bubble solution in bubble solution trough 102, to travel above funnel upper opening 114, and to expose refreshed bubble orifice 92 to the air stream, thus creating bubbles. After entering through lower impeller housing spout 54 and rotating impeller 70, the pressurized fluid exits upper impeller housing 60 through upper impeller housing spout 61 and simultaneously enters fluid drum 30 through fluid drum attach spout 35.

After entering and pressurizing fluid tank 30, the fluid exits the fluid tank through one or more fluid passage holes 32 and through one or more fluid passage slots 46 and sprays outward. Fluid tank 30 and fluid drum 40 are adapted such that at any given point in the bubble creation cycle and the fluid flow and spray cycle, at least one fluid passage hole 32 and at least one fluid passage slot 46, will always be lined up with one another so to create a constant fluid flow path.

As can be seen by reference to Figure 2, bubble wheel gear 98 has a diameter less than the diameter of the bubble wheel 90. The bubble wheel 90 is prevented from inadvertently becoming detached from bubble wheel axle retaining slots 118 by bubble wheel axle retaining flanges 96. Retaining flanges 96 also act to keep bubble wheel 90 from rubbing against the sides of funnel 112. Bubble solution is poured into the interior of upper container shell 110 through fill spout 126 to a predetermined level as indicated by fill line 108. The maximum fill line 108 is placed no higher on lower shell 100 than to equal the volume defined by the maximum liquid that can be held in the machine without running out of funnel 112 when oriented in any position.

Figures 3-5 illustrate the additional unique advantages of spill resistance when fluid is filled at or below the fill line 108 in the subject invention regardless of the various possible orientations. As is apparent from Figure 3, when the invention is in the upright position liquid will always be below the lower edge 116 of funnel 112. When machine 10 is in the upside down position as in Figure 4, the liquid will occupy the space immediately around funnel 112 but not be able to enter funnel 112 for discharge through opening 114. When machine 10 is in a sideways position as in Figure 5, the liquid level will always be between the side of the funnel 112 and the lower side of the two container shells 100 and 110. Furthermore, when the machine 10 is oriented in any of an infinite variations of the above described positions, it will behave in a like manner and prevent the spillage of the solution.

As is seen by reference to Figures 1 and 2, in the preferred embodiment, the fluid powered bubble machine of the subject invention is mounted on a base with bubbles being blown from one end and fluid emanating from the other. However, other embodiments of the subject invention could readily be adapted to have the fluid emanate from a vertical fluid tank and the bubble blowing portion of the machine could be mounted above the fluid tank so as to increase the elevation of the bubbles being blown. The entire machine could also be readily adapted to take the form of a fire hydrant, a cartoon character, or other aesthetically pleasing shape.

Lastly, the preferred method of fabrication would be injection molding for high volume low cost production. The material used could be any of a variety of materials such as polyethylene, polypropylene, polyester, nylon, etc. that are compatible with the injection molding process.

While there is shown and described herein certain specific structure embodying the invention, it will be manifest to those skilled in the art that various modifications and rearrangements of the parts may be made without departing from the spirit and scope of the underlying inventive concept. The subject invention is not limited to the particular forms herein shown and described except insofar as indicated by the scope of the

appended claims.

I claim:

1. A mechanical toy wherein said toy comprises an automated bubble producing device combined with a liquid emitting device.

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2. The toy of claim 1 wherein said liquid is water.

3. The toy of claim 1 wherein said toy is connected to a continuous water source.

10 4. The toy of claim 1 wherein said liquid emitting device defines a hydraulic motor.

5. The toy of claim 4 wherein said automated bubble producing device is actuatingly connected to said hydraulic motor.

15 6. The toy of claim 1 wherein said toy further comprises a container defining an inner cavity, said container having an opening in a wall of said container to provide communication between said inner cavity and the exterior of said container, an access device for accessing the liquid contents of said container through said opening, and a hydraulic motor operable in response to liquid flow from a source external to said apparatus, said hydraulic motor imparting movement to said access device for manipulating said access device into and out of contact with the liquid contents of said inner cavity.

20 25 7. The toy of claim 1 wherein said toy further comprises a first container defining a first inner cavity, said first container having a funnel integrally formed with and extending into said first inner cavity to provide communication between said first inner cavity and the exterior of said first container to inhibit spillage of the contents of said first container, and an access device for accessing the liquid contents of said first container through said funnel, said apparatus further comprising a second container having a second inner cavity, and a hollow cylinder rotatably mounted within said second inner cavity, said second container having at least one exit port to provide for communication between said second inner cavity and the exterior of said second container, and said hollow cylinder having at least one hole to provide communication between the interior of said hollow cylinder and the interior of said second inner cavity, said apparatus further comprising a

DETAILED DESCRIPTION

hydraulic motor operable in response to liquid flow from a source external to said apparatus, said hydraulic motor imparting movement to said access device for manipulating said access device into and out of contact with the liquid contents of said first inner cavity and said hydraulic motor imparting rotation to said hollow cylinder within said second inner cavity and wherein rotation of said hollow cylinder causes periodic alignment of said at least one hole in said hollow cylinder with said at least one exit port in said second container, and wherein said hydraulic motor comprises an impeller and an impeller housing, said impeller housing having a first opening for receiving said liquid from a source external to said apparatus and a second opening spatially removed from said first opening for permitting said liquid from said external source to exit said impeller housing and wherein said liquid flows into said first opening, past said impeller and exits out said second opening and whereby said liquid flow imparts rotation to said impeller and wherein the rotation of said impeller imparts movement of at least one of said hollow cylinder and said access device, and wherein said impeller is attached to a rotating assembly, said rotating assembly comprising an axle being integrally attached to said impeller at a first end of said axle within said impeller housing, said axle terminating in a second end on the exterior of said impeller housing and wherein said second end of said axle is rotatably and integrally attached to said hollow cylinder for rotation of said hollow cylinder within said second inner cavity, and wherein said second opening in said impeller housing is connected to said second container and provides communication between said impeller housing and said second inner cavity and said hollow cylinder, and wherein said liquid from said external source exits through said second opening in said impeller housing and flows into said hollow cylinder, and whereby rotation of said hollow cylinder permits said liquid to exit through the at least one aligned hole and exit port of said hollow cylinder and said second container in a time interval corresponding to the time in which such alignment is maintained.

8. A non liquid submerged bubble creation apparatus comprising a hydraulic motor and a bubble creation device wherein said hydraulic motor is adapted to actuate said bubble creation device, said apparatus further including at least one exit port for the emission of hydraulic fluid.

9. The apparatus of claim 8 wherein the hydraulic fluid for said hydraulic motor is water.
10. The apparatus of claim 8 wherein said apparatus is connected to a continuous
5 water source.
11. The apparatus of claim 8 wherein said apparatus defines a mechanical toy.
12. The bubble creation device of claim 8 wherein said bubble creation device further
10 comprises a container defining an inner cavity, said container having an opening in a wall of said container to provide communication between said inner cavity and the exterior of said container, and an access device for accessing the liquid contents of said container through said opening, and the hydraulic motor of claim 8, wherein said hydraulic motor is further operable in response to liquid flow from a source external to said apparatus, and wherein said hydraulic motor imparts movement to said access device for manipulating said access device into and out of contact with the liquid contents of said inner cavity.
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- 20 13. The apparatus of claim 8 wherein said apparatus further comprises a first container defining a first inner cavity, said first container having a funnel integrally formed with and extending into said first inner cavity to provide communication between said first inner cavity and the exterior of said first container to inhibit spillage of the contents of said first container, and an access device for accessing the liquid contents of said first container through said funnel, said apparatus further comprising a second container having a second inner cavity, and a hollow cylinder rotatably mounted within said second inner cavity, said second container having at least one exit port to provide for communication between said second inner cavity and the exterior of said second container, and said hollow cylinder having at least one hole to provide communication between the interior of said hollow cylinder and the interior of said second inner cavity, and the hydraulic motor of claim 8 further being operable in response to liquid flow from a source external to said apparatus, and wherein said hydraulic motor imparts movement to said access device for manipulating said access device into and out of contact with the liquid contents of said first inner cavity and said hydraulic motor imparts rotation to said hollow cylinder within said
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second inner cavity and wherein rotation of said hollow cylinder causes periodic alignment of said at least one hole in said hollow cylinder with said at least one exit port in said second container, and wherein said hydraulic motor comprises an impeller and an impeller housing, said impeller housing having a first opening for receiving said liquid from a source external to said apparatus and a second opening spatially removed from said first opening for permitting said liquid from said external source to exit said impeller housing and wherein said liquid flows into said first opening, past said impeller and exits out said second opening and whereby said liquid flow imparts rotation to said impeller and wherein the rotation of said impeller imparts movement of at least one of said hollow cylinder and said access device, and wherein said impeller is attached to a rotating assembly, said rotating assembly comprising an axle being integrally attached to said impeller at a first end of said axle within said impeller housing, said axle terminating in a second end on the exterior of said impeller housing and wherein said second end of said axle is rotatably and integrally attached to said hollow cylinder for rotation of said hollow cylinder within said second inner cavity, and wherein said second opening in said impeller housing is connected to said second container and provides communication between said impeller housing and said second inner cavity and said hollow cylinder, and wherein said liquid from said external source exits through said second opening in said impeller housing and flows into said hollow cylinder, and whereby rotation of said hollow cylinder permits said liquid to exit through the at least one aligned hole and exit port of said hollow cylinder and said second container in a time interval corresponding to the time in which such alignment is maintained.

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14. A non liquid submerged bubble creation apparatus comprising a bubble producing device connected to a continuous water source.
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15. The apparatus of claim 14 wherein said bubble producing device and said continuous water source are connected to a hydraulic motor.
16. The apparatus of claim 15 wherein the hydraulic fluid for said hydraulic motor is water.
17. The apparatus of claim 14 wherein said apparatus defines a mechanical toy.

18. The apparatus of claim 14 wherein said apparatus further comprises a container defining an inner cavity, said container having an opening in a wall of said container to provide communication between said inner cavity and the exterior of said container, an access device for accessing the liquid contents of said container through said opening, and a hydraulic motor operable in response to liquid flow from a source external to said apparatus, said hydraulic motor imparting movement to said access device for manipulating said access device into and out of contact with the liquid contents of said inner cavity.
19. The apparatus of claim 14 wherein said apparatus further comprises a first container defining a first inner cavity, said first container having a funnel integrally formed with and extending into said first inner cavity to provide communication between said first inner cavity and the exterior of said first container to inhibit spillage of the contents of said first container, and an access device for accessing the liquid contents of said first container through said funnel, said apparatus further comprising a second container having a second inner cavity, and a hollow cylinder rotatably mounted within said second inner cavity, said second container having at least one exit port to provide for communication between said second inner cavity and the exterior of said second container, and said hollow cylinder having at least one hole to provide communication between the interior of said hollow cylinder and the interior of said second inner cavity, said apparatus further comprising a hydraulic motor operable in response to liquid flow from a source external to said apparatus, said hydraulic motor imparting movement to said access device for manipulating said access device into and out of contact with the liquid contents of said first inner cavity and said hydraulic motor imparting rotation to said hollow cylinder within said second inner cavity and wherein rotation of said hollow cylinder causes periodic alignment of said at least one hole in said hollow cylinder with said at least one exit port in said second container, and wherein said hydraulic motor comprises an impeller and an impeller housing, said impeller housing having a first opening for receiving said liquid from a source external to said apparatus and a second opening spatially removed from said first opening for permitting said liquid from said external source to exit said impeller housing and wherein said liquid flows into said first opening, past

- 100-100-100-100-100
- 5 said impeller and exits out said second opening and whereby said liquid flow imparts rotation to said impeller and wherein the rotation of said impeller imparts movement of at least one of said hollow cylinder and said access device, and wherein said impeller is attached to a rotating assembly,
- 10 said rotating assembly comprising an axle being integrally attached to said impeller at a first end of said axle within said impeller housing, said axle terminating in a second end on the exterior of said impeller housing and wherein said second end of said axle is rotatably and integrally attached to said hollow cylinder for rotation of said hollow cylinder within said second inner cavity, and wherein said second opening in said impeller housing is connected to said second container and provides communication between said impeller housing and said second inner cavity and said hollow cylinder, and wherein said liquid from said external source exits through said second opening in said impeller housing and flows into said hollow cylinder, and whereby rotation of said hollow cylinder permits said liquid to exit through the at least one aligned hole and exit port of said hollow cylinder and said second container in a time interval corresponding to the time in which such alignment is maintained.
- 15 20. A non liquid submerged mechanical toy defining an automated bubble creation apparatus comprising a hydraulic motor and a bubble creation device wherein said hydraulic motor is adapted to actuate said bubble creation device, said apparatus further including at least one exit port for the emission of hydraulic fluid, and said apparatus being connected to a continuous water source.
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ABSTRACT OF THE DISCLOSURE

An apparatus for producing both bubbles and streams of water that because of its unique geometry and design, will when oriented in any position prevent spillage of its bubble solution when filled to the fill line or below, and is capable of automatic and continuous bubble generation while simultaneously generating amusing water streams. It is principally intended for use by young children as a lawn water toy as well as a bubble creating device.

MICHAEL R. SCHRAMM 801-734-2599
UNIT # , SERIAL #
FLUID POWERED BUBBLE MACHINE WITH SPILL PROOF CAPABILITY

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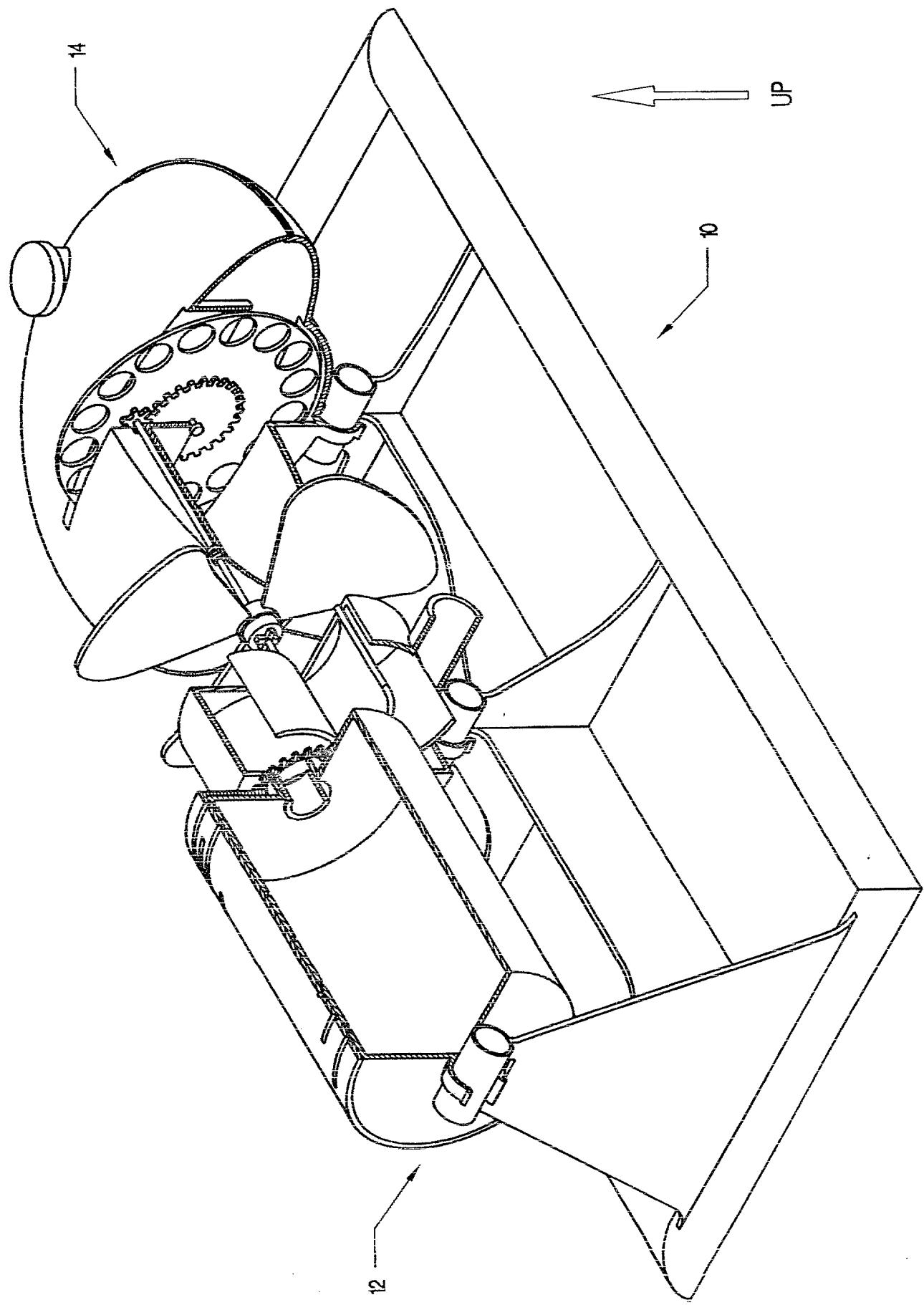


FIGURE 1

MICHAEL R. SCHRAMM 801-734-2599
UNIT # - SERIAL #
FLUID POWERED BUBBLE MACHINE WITH SPILL PROOF CAPABILITY

2/11

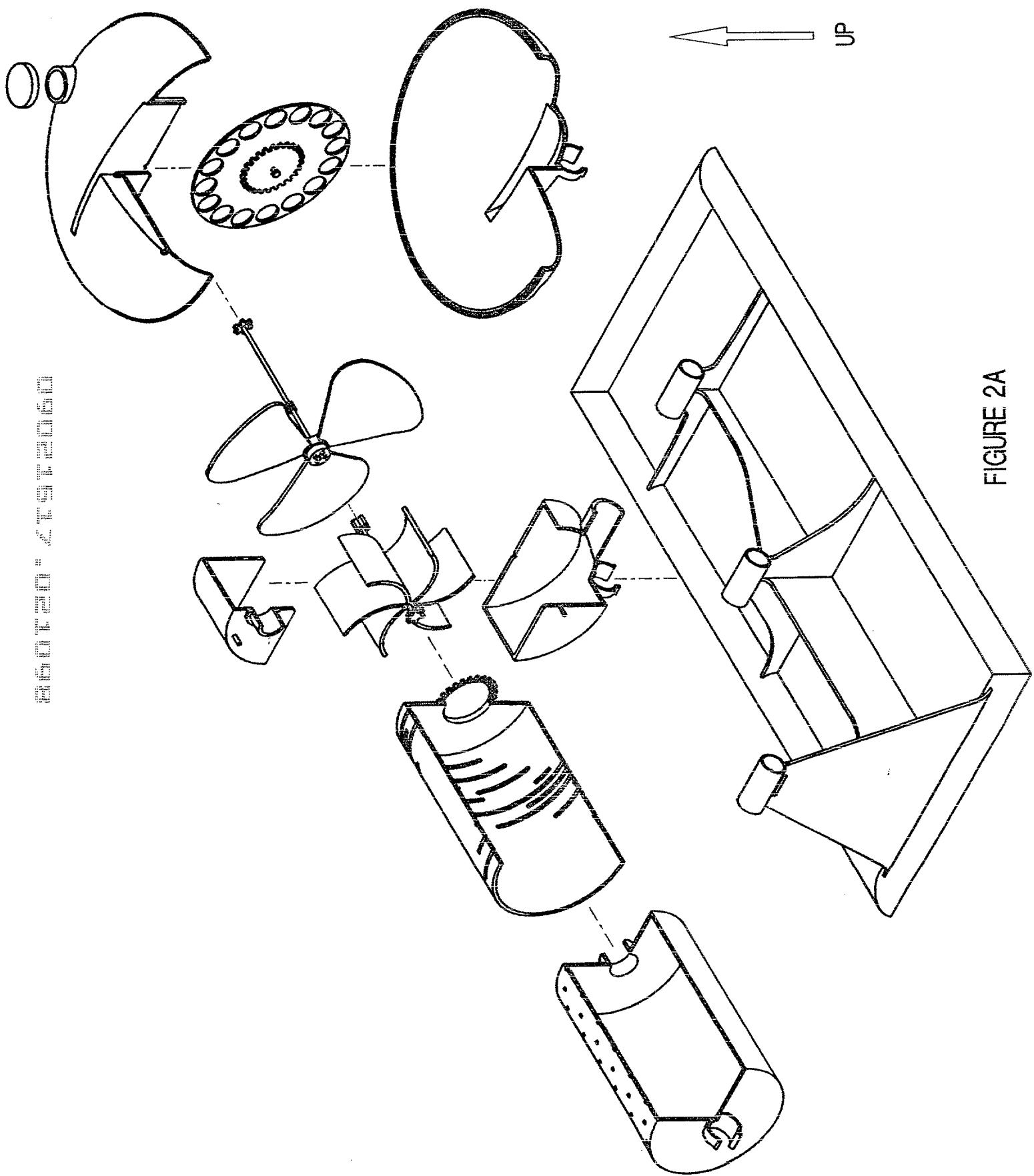


FIGURE 2A

MICHAEL R. SCHRAMM 801-734-2599
UNIT # , SERIAL #
FLUID POWERED BUBBLE MACHINE WITH SPILL PROOF CAPABILITY

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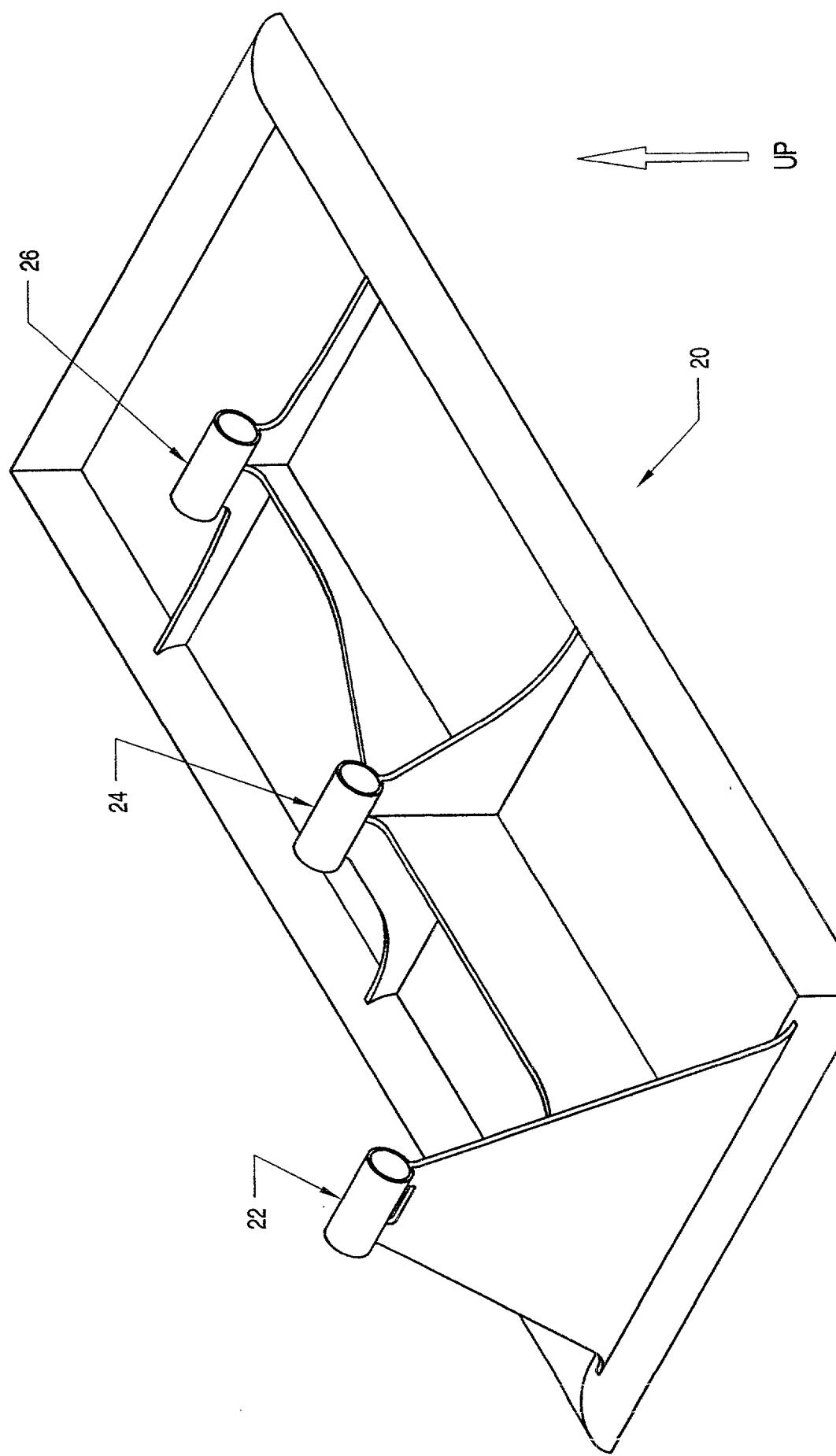


FIGURE 2B

MICHAEL R. SCHRAMM 801734-2599
UNIT # , SERIAL #
FLUID POWERED BUBBLE MACHINE WITH SPILL PROOF CAPABILITY

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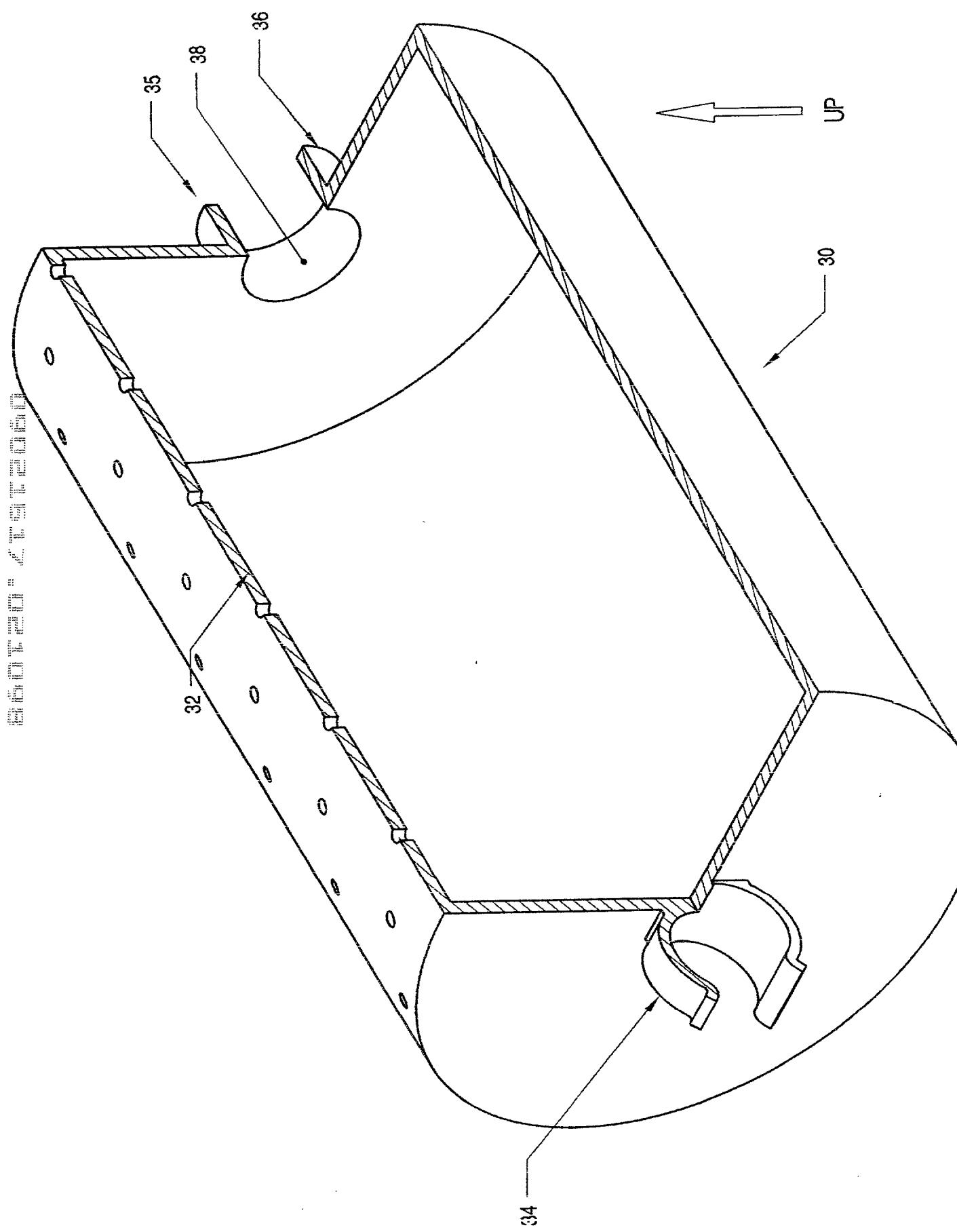


FIGURE 2C

MICHAEL R. SCHRAMM 801-734-2599
UNIT # _____ SERIAL # _____
FLUID POWERED BUBBLE MACHINE WITH SPILL PROOF CAPABILITY

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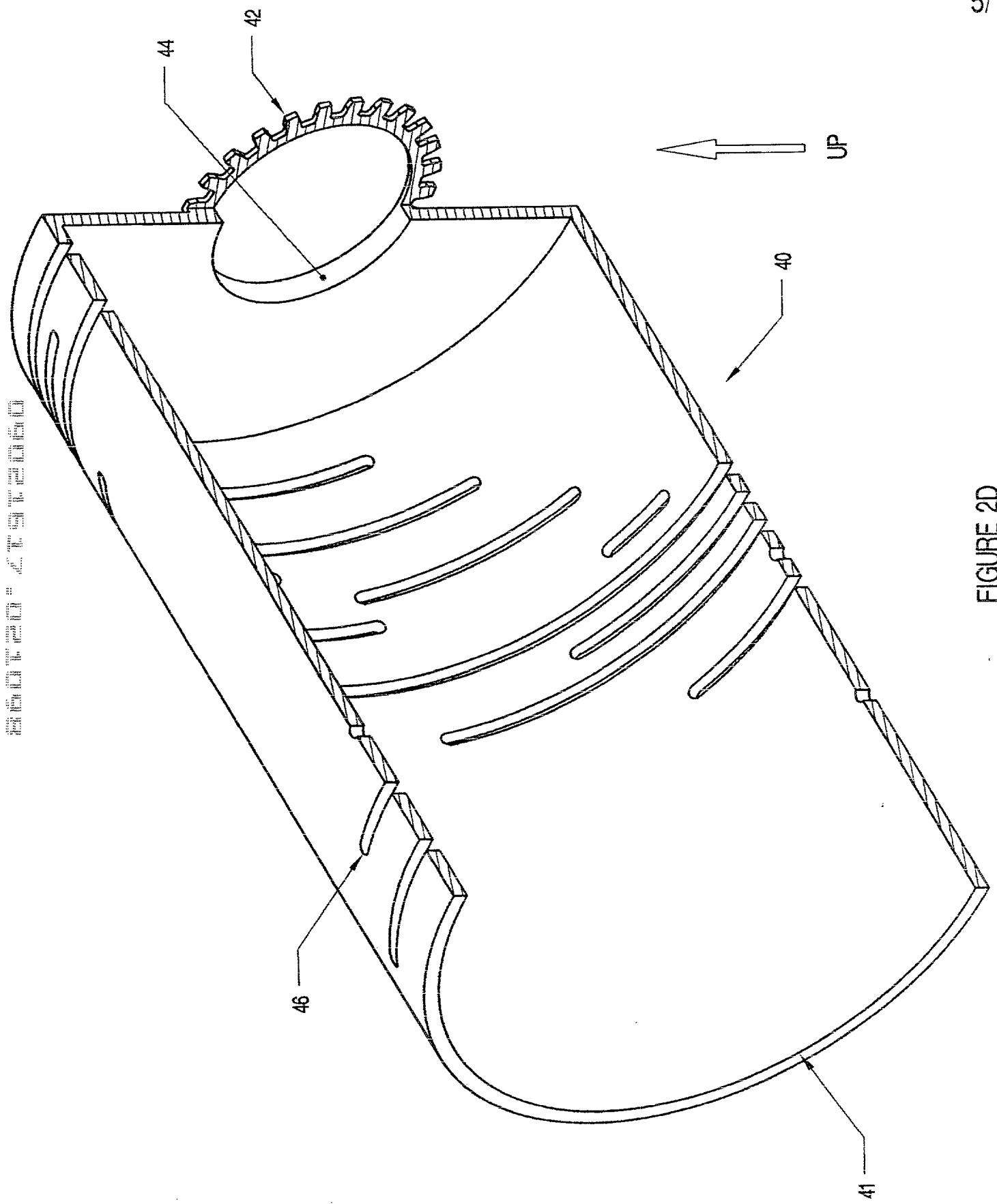
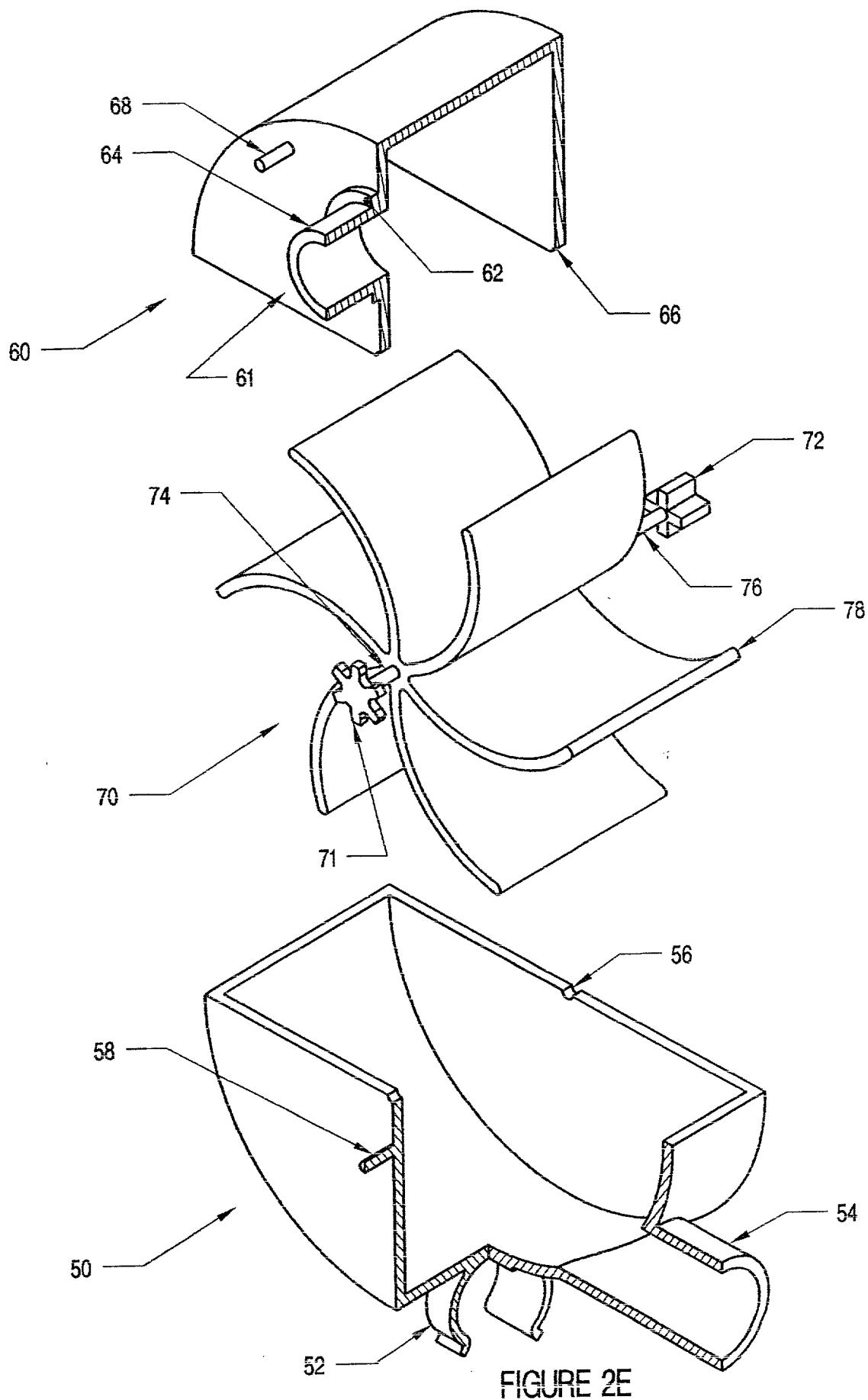
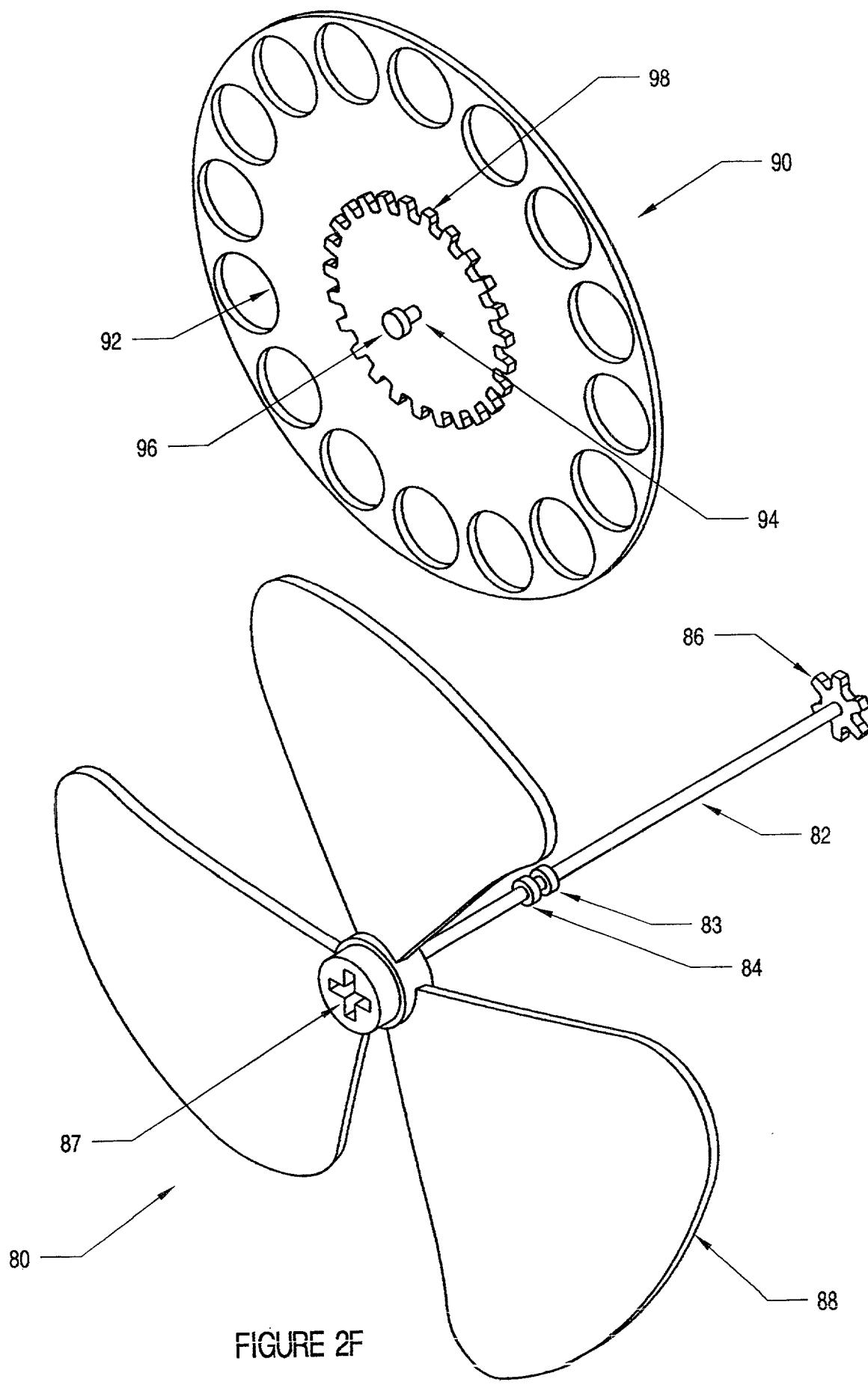


FIGURE 2D

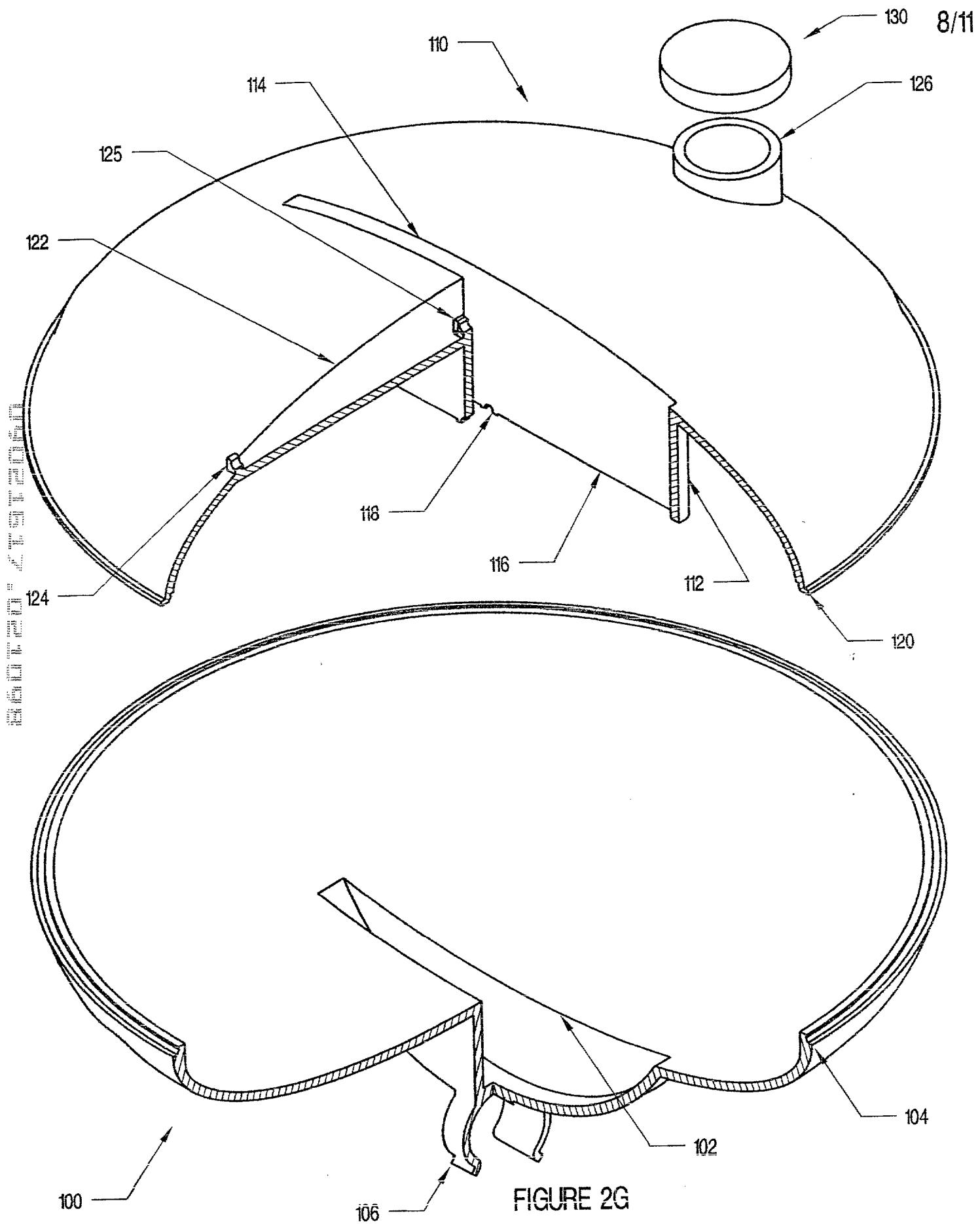
MICHAEL R. SCHRAMM 801-734-2599
UNIT # , SERIAL #
FLUID POWERED BUBBLE MACHINE WITH SPILL PROOF CAPABILITY

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MICHAEL R. SCHRAMM 801734-2599
UNIT # , SERIAL #
FLUID POWERED BUBBLE MACHINE WITH SPILL PROOF CAPABILITY



MICHAEL R. SCHRAMM 801-734-2599
UNIT # , SERIAL #
FLUID POWERED BUBBLE MACHINE WITH SPILL PROOF CAPABILITY

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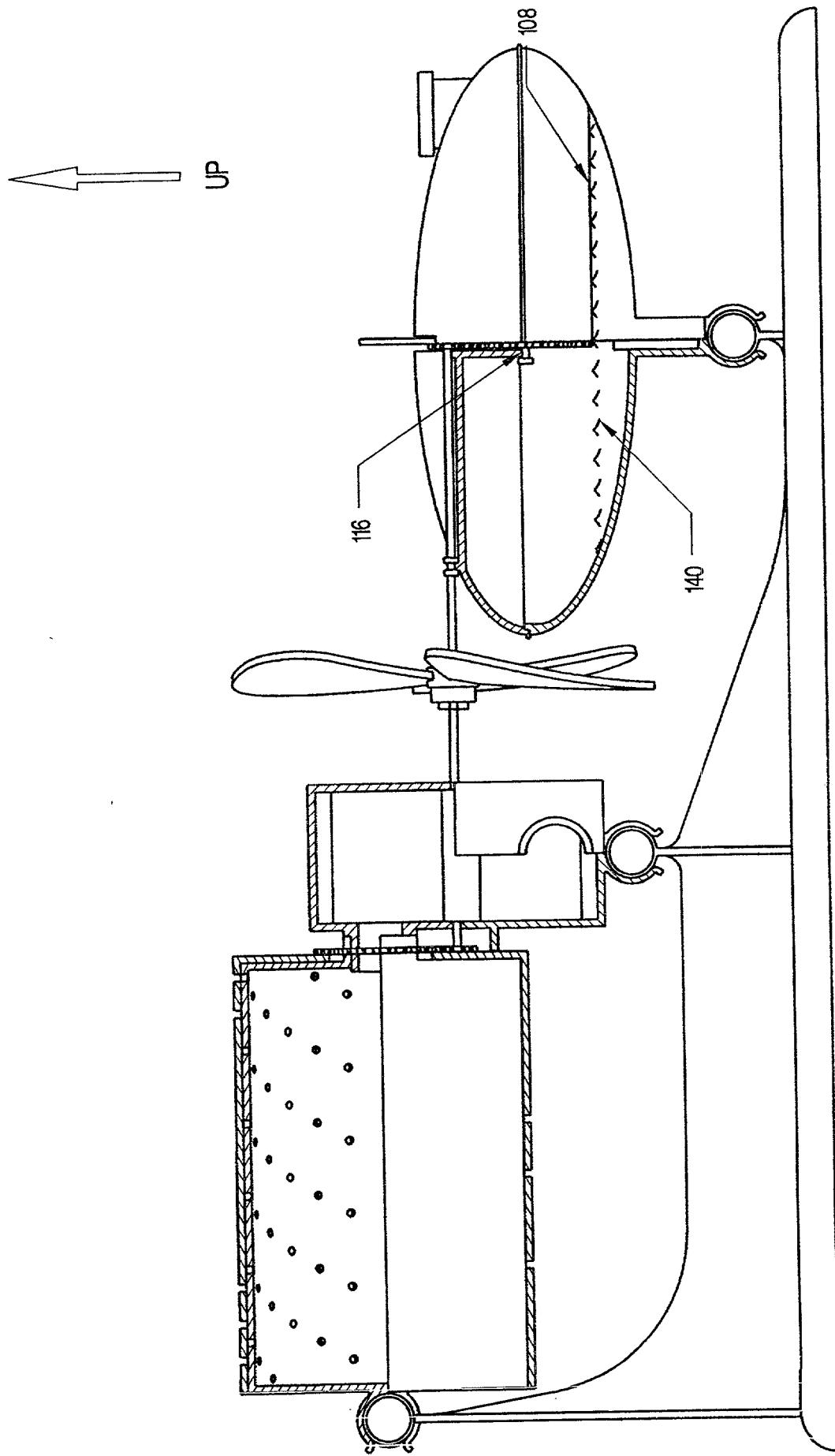


FIGURE 3

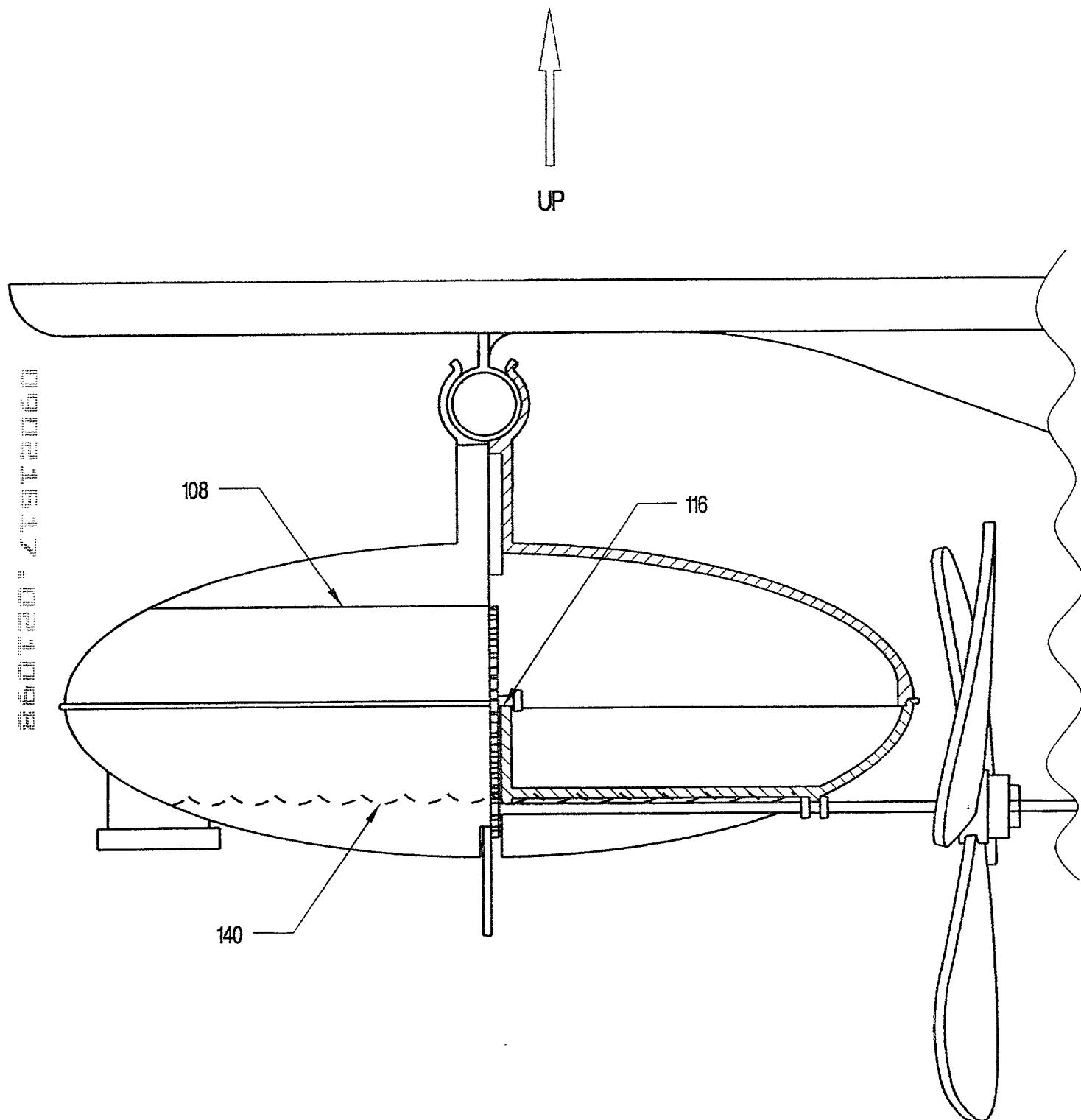


FIGURE 4

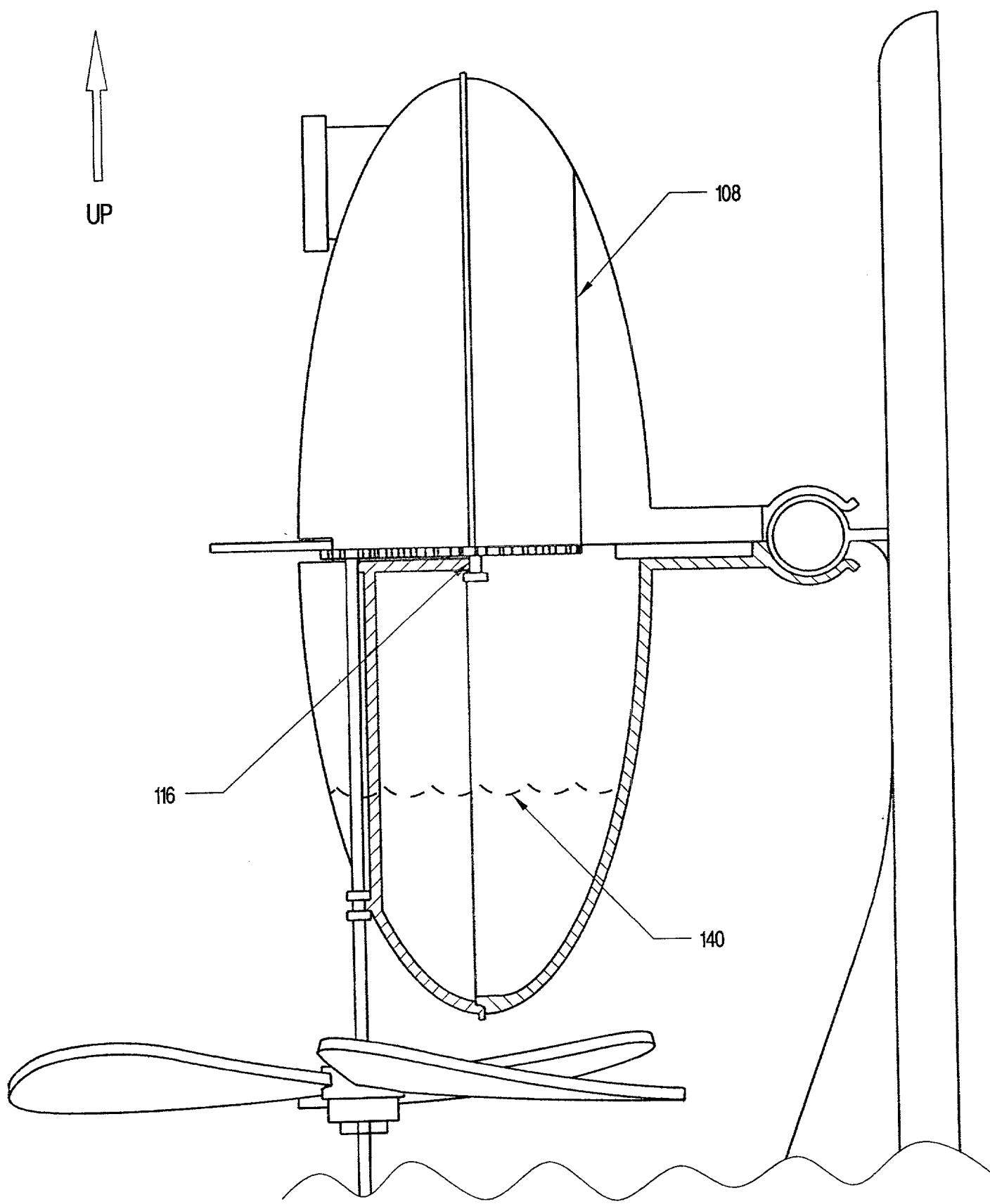


FIGURE 5

PATENT

DECLARATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled "**FLUID POWERED BUBBLE MACHINE WITH SPILL PROOF CAPABILITY**" the specification of which:

X is attached hereto.
— was filed on _____ as Application Serial No. _____

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

I hereby declare that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Inventor's Full Name: Michael R. Schramm
(First) (Initial) (Last)

Inventor's Signature: Michael R. Schramm

Date: 2/10/98 Country of Citizenship: USA

Residence Address: 350 West 2000 South; Perry, UT 84302
(Include number, street name, City, state, and country)

PATENT

Applicant or Patentee: **MICHAEL R. SCHRAMM**

Serial or Patent No.: _____

Filed or Issued: _____

For: **FLUID POWERED BUBBLE MACHINE WITH SPILL PROOF CAPABILITY**

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37 CFR 1.9(f) and 1.27(b)) - INDEPENDENT INVENTOR**

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled **FLUID POWERED BUBBLE MACHINE WITH SPILL PROOF CAPABILITY** described in

the specification filed herewith

application serial no.: _____, filed : _____

patent no.: _____, issued: _____

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

no such person, concern or organization

persons, concerns or organizations listed below*

*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

MICHAEL R. SCHRAMM

Name of Inventor

Michael R. Schramm

Signature of Inventor

February 10, 1998

Date